

Apple Demonstration to Show Population Growth

(Carrying Capacity – Food and Shelter)

Whole apple represents planet earth, which must meet the needs for food, water and shelter for all living things. *What portion of this earth provides habitat for humans and other land-dwelling animals?*

Since 70 to 75 percent of the earth is covered by oceans, cut the apple into fourths and remove three of the pieces, leaving only one-fourth of the apple in your hand.

About 25 to 30 percent of this remaining fourth is desert, too dry to live on (cut off a little less than a third, leaving a little more than two-thirds of the apple quarter).

Another 25 to 30 percent is mountains, too cold, high and steep to live on (cut off another piece, leaving about 40 percent of the apple quarter).

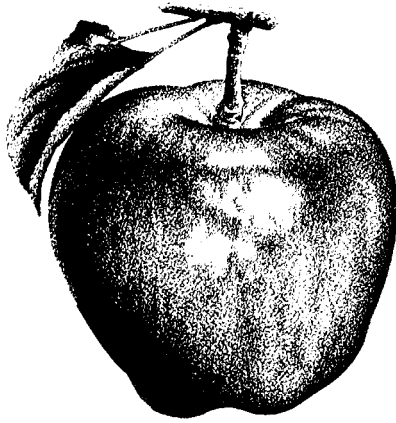
Of this remaining portion, the surface (skin) is used primarily as living space for humans and other land-dwelling animals (trim the skin from the small piece of apple). The thin layer of apple attached to the skin represents our underground use.

Ask, “How long will it be before our population consumes all of this available living space?” (Eat the piece of skin to symbolize consuming the living space.)

Human Population Growth

1st billion	2-5 million years	About 1800 AD
2nd billion	130 years	1930
3rd billion	30 years	1960
4th billion	15 years	1975
5th billion	11 years	1986
Projected 6th billion	11 years	1997





Activity:

Earth – The Apple of Our Eye

(Land Resources – Food Production)

Background: Protecting our land resources is very important. Advanced agricultural technology has enabled the world to feed many of its people, but the earth's population continues to expand. A fixed land resources base and an ever-increasing number of people to feed cause each person's portion to become smaller and smaller.

Materials: One large apple; sharp knife.

Procedure: Consider that this apple represents the earth. Slice the apple into quarters, setting three aside. The three quarters represent the waters of the world. *What fraction of the earth is left?*

(1/4) The fourth quarter represents earth's land area. Slice this land in half and set aside one of the pieces. The portion set aside represents the land area that is inhospitable to people: polar areas, deserts, swamps, high or rocky mountains. *What fraction do you have left?*

(1/8) The remaining piece is land area where people live, but not necessarily where they grow the foods needed for life. Slice the 1/8 piece into four sections and set three aside. *What fraction do you have left?*

(1/32) The 3/32 set aside represents the areas that are too rocky, wet, cold, steep, or where the soil is too poor to produce food. They also contain the cities, suburban sprawl, highways, shopping centers, schools, parks, factories, parking lots and other places where people live, but where they cannot grow food.

Carefully peel the 1/32 slice of the earth. This tiny bit of peel represents the very thin surface of the earth's crust (less than five feet deep) which humans depend upon for growing food.

Our planet is finite. *What can you do to help protect the quality of the land, air, and water that we all need for survival?*

(Activity contributed by Audrey H. Brainard, Holmdel, NJ to: *Teacher's PET Term Paper*, Winter 1988, publication of Zero Population Growth, 1400 16th St. NW, Suite 320, Washington, DC 20036, 202-332-2200.)